

# Engineering Weekly Report 9/19/2024 - 9/26/2024

<https://docs.mbari.org/internal/projects/Engineering/Weeklies/2024/>

## Executive Council Notes

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## Individual Activities

- Michael Anderson
- Kevin Barnard
  - 902204 - Scalable Robotics
    - Implemented prototype REST API for MolaRS mission submission and management
- Francois Cazenave
  - 901405 - Wave-Energy Conversion for Oceanographic Applications
    - Buoy recovery
  - 902106 - Niobicon-Based AUV Docking Development
    - New photosensor housing design
- Danelle Cline
  - Out of Office
    - September 24/25 NOAA SoundCoop workshop Boulder, CO
    - Oct 7-10 - 5th Marine Imaging Workshop in Monterey
- Duane Edgington
  - 901502 - Ocean Soundscape
    - Continuing exploration of Whisper LLM transformer fine-tuned to classify passive acoustic monitoring (PAM) data
    - Ran evaluation of Google's [multi-species whale vocalization detector/classifier](#) on MARS data. Lots of confusion/false positives – may need fine-tuning or data wrangling, or both to be useful to us.
    - Exploring fine-tuning DETR (object detection with transformer) on PAM data
  - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
    - Team meeting.
    - Evaluating most recently created yolov5 detection model.
    - Preparing poster for MiW2024 workshop Oct 7-10 with Melissa.
  - Out of Office
    - Oct 21 - Nov 8, 2024. Vacation UTC+1
    - Dec 8 - Dec 17, 2024. [Neurips](#) Conference. Vancouver, BC.
- Jon Erickson
- Kevin Gomes
  - Out of Office
    - Aug 16: Vacation
    - Sep 16: Vacation
    - Oct 7-11: Vacation
- Andy Hamilton
- Kent Headley
  - Out of Office

- 10/10-17 Vacation
- Rich Henthorn
  - 902305 - Event Detection Using the Sedimentation Event Sensor
    - Analyzing deployment data
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  - Out of Office
    - Sick leave: Sep 16 - 23
- Akshay Hinduja
  - 702108 - Deployable AI
    - Setup Nvidia Jetson AGX Orin
    - Test camera setup
  - 902204 - Scalable Robotics
    - Norbit WBMS driver: Fixed visualization issues, working on LCM message generation and reading GUI config files in headless state
  - 902101 - LRAUV Technology Development
    - Setup LRAUV-tools on loaner desktop
  - Out of Office
    - WFH Wed Sept 25, Fri Sept 27, Wed Oct 2
    - Marine Imaging Workshop
- Brett Hobson
- Irene Hu
  - Out of Office
    - Sept 4-10: sick
    - Sept 16, 18: planned Carson day
    - Sept 23-Oct 2: IEEE OCEANS / trip to Boston
- Scott Jensen
  - 300078 - DMO Support - AUV
    - Evaluated a power supply IC along with a custom transformer
  - 706008 - READI-Net
    - Collecting state of development to help define statement of work for outside contractor
  - 901205 - ESP SURF Center
    - Supported lab functions
  - 901405 - Wave-Energy Conversion for Oceanographic Applications
    - Many discussions about how the buoy may have failed
  - 902106 - Niobicon-Based AUV Docking Development
    - Trying to gain access to a datasheet for the IC used in Power Of Comms on the dock
  - Overhead
    - David Packard failure discussions and consultation
  - Out of Office
    - October 7-9
- Brent Jones
  - Out of Office
    - 1 sick day
- Chad Keczy
  - Out of Office
    - Out of office on Fridays
- Brian Kieft
  - 300083 - DMO Support - LRAUV
    - Supporting CANON and EcoHAB field programs
  - 901009 - CANON

- Worked on various mission iterations for intravehicle comms and Waveglider eavesdropping
    - Fixed up a couple hotspot scripts to be compatible with this year's experiment
  - 901513 - Targeted Sampling by AUVs
    - Worked with Yanwu to test missions for CANON
  - 902101 - LRAUV Technology Development
    - A couple minor bug fixes but was able to successfully deploy the DAT MMP component for the field experiment. Currently working on merging into the release following successful testing.
  - Overhead
    - Our collaboration with Oshen has begun. Took delivery of the ASV and am assisting the founders in preparation for sea trials.
    - LNM was issued on time and all other associated paperwork for FN access is wrapped up.
    - Met with Saab again. Significant labor risk on their end due to allocations. Passed along final piece needed for cross compiling on their host machine.
- Denis Klimov
- Eric Martin
  - Out of Office
    - Vacation last week.
- Thom Maughan
  - 901009 - CANON
    - Working on eDNA tackle box, troubleshooting startup issue.
  - 901217 - Chemical Sensors
    - Nitrate (ISUS) driver is getting close. Finished the init routines and coefficient file loading. Ran out of internal RAM on one set of coefficients that can be removed per Yui. Debugging with print statements is slow, but working.
    - pH driver is now working with the Jensenian analog sim. Thanks to Irene for troubleshooting a reversed diode on the baseboard.
    - Tiva 123 revB support. New pinmux scheme is implemented with prelim test. Received two handbuild Tiva 123 RevB on Sep 25 - working! Many thanks to the EETechs for fast turnaround.
    - Tiva 1290 v1.0 board bringup. Uarts, I2c, microSD are working. Using the 1290 to resolve some of the code porting on the 123 when the single step debugger is needed.
    - Interviewed a contractor from Suburban Marine. Wrote a PO and working with Ken on details.
  - Out of Office
    - Oct/Nov two to three weeks vacation Colorado.
- Mike McCann
  - Out of Office
    - 18 September: Vacation day
    - 25-27 September 2024: Web3D Conference
    - 30 September - 3 October 2024: Vacation
- Rob McEwen
- Paul McGill
  - 300070 - DMO Support - Ventana
    - Helped Ethan with setting nulls on repaired joystick
    - Worked with DJ on better way to control camera from pilot's joystick
    - Working with Duane and DJ to add isolation to new power monitor board
  - 701147.99 - MARS IV Node Upgrade
    - Helping Bryan with grounding and isolation in new MARS power and electronics housings
  - 902401 - Geo-Sense
    - Trying to fix error with battery sphere penetrators

- Out of Office
    - Medical appts Mon, Wed; sick days Thu, Fri
- Enoch Nicholson
  - 706008 - READI-Net
    - Ordering Gasket material
  - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
    - BVLOS waiver application draft
  - Out of Office
    - April 5-10 Vacation (Available via Slack & Email)
    - April 14-18 IEEE Oceans (Available via Slack & Email)
    - April 19-23 Vacation (Unavailable)
    - September 4-5 Vacation
    - September 19-24 Vacation (Unavailable)
- Tom O'Reilly
- Mike Risi
  - 200105 - Core Navigation - MDUC
    - Developed TCP stream input/output processes for new David Packard terminal servers
    - Working with Kevin on serial terminal testing
  - 300062 - DMO Support - Doc Ricketts
    - Developing KPT-45 pan and tilt interface process
    - Working with Drew on KPT-45 pan and tilt integration
  - 901101 - Seafloor Mapping
    - Prototyping LASS control GUI
    - Continuing work on new LASS control system
  - Out of Office
    - Offsite on Tuesday and Friday
    - January 16 - January 19, 2024
    - February 22, 2024
    - March 4 - March 8, 2024 - vacation
    - April 24, 2024 - vacation
    - May 20 - May 24, 2024 - vacation
    - June 17 - June 18, 2024 - vacation
    - September 3 - September 9, 2024 - vacation
- Paul Roberts
  - 901904 - Deep-Sea Coral-Sponge Community Observatory
    - Multispec deployments and data analysis
  - 902004 - Planktivore
    - ECOHAB deployment
    - Image processing performance improvements
  - 902306 - SINKER
    - Side-looking camera testing
- Brent Roman
  - 708165 - NOAA-MERHAB-UW
    - Wrote greatly simplified ESP 2G Elevator calibration procedure
    - Improved 2G's automatic carousel calibration utility
  - 901205 - ESP SURF Center
    - Updating all 3G ESPs firmware to correct a minor bug discovered just before I left for Japan
    - Investigating Preson's proposed software changes for 3G ESPs.
  - 901913 - Wet Wifi
    - Working with MiniROV team to integrate a WetWiFi modem onto that platform

- Shipped our H150 modems back to OceanComm so one of them could be repackaged in a 1km depth rated housing.
  - DQ2320 - McCloud River Salmon
    - Running really well. Recovering scheduled for first week of October.
- Carlos Rueda
  - 701165 - OVAI P2
    - Completed CMS UI webapp (0.9.0). Very well received. Enabled production and staging instances. Joost announced the availability of the production instance to the team.
  - 901502 - Ocean Soundscape
    - Attended (remotely) the morning session of the first day of the SoundCoop workshop. PBP demos went smoothly (thanks Danelle for presenting in person). Updated JupyterLab@gizo to the latest mbari-pbp 1.5.1.
  - 902101 - LRAUV Technology Development
    - Some occasional exchanges over slack (under MBARI and also under WHOI).  
(In general, no much work these days in this project, but glad to see 5 LRAUVs deployed, with all TethysDash related components (backend, dash4, odss2dash) working ok AFAICT).
  - 902204 - Scalable Robotics
    - Focused on Dial component integration development.
  - Out of Office
    - Sept 19: out sick
- Karen Salamy
  - 200103 - Core CTD Data - MDUC
    - Updated a ROV CTD O2 QC dive for Rob S.
  - 300057 - Mooring Maintenance
    - Have been monitoring some data download issues with OA2. Downloads for the last month or so have been intermittent. When they fail during the day, they tend to catch up at night often after midnight. I also noticed that the Battery Monitor folder was not updating daily since August 4.
    - Set up OA1 202409 deployment testing on coredata8.
  - 902101 - LRAUV Technology Development
    - I continue to work on map updates for the Dash5 UI including changing the vehicle display colors and visual preferences for the uses to choose.
  - Overhead
    - Had a small emergency at home yesterday that required me working from home.
  - Out of Office
    - US React Summit Conference: November 19-24, 2024, NYC.
    - On-campus 3 days/week ( **T, W, TH** ).
- Brian Schlining
  - 500055 - VARS, M3/RS, DSG
    - Updated m3-quickstart config to add CORS to support the new kb ui development by Paul Rogers
  - 902002 - FathomNet
    - Added [organism part](#) and [biological structure](#) branches to the worms-server.
  - 902403 - Expedition DB Modern
    - Continuing work on database cleanup and redesign.
  - 902404 - 5th Marine Imaging Workshop
    - Entering the home stretch!
    - Finished wrangling presenters who haven't registered.
    - Organized poster sessions. Updates to the web site including the [program](#), [poster sessions](#), and [abstracts](#)

- Working on [interactive workshop session](#) presentations.
  - Out of Office
    - Oct 7-10 - 5th Marine Imaging Workshop in Monterey
- Alana Sherman
  - Out of Office
    - Out helping with school field trip Tuesday.
- George Stern
  - Out of Office
    - IEEE Oceans Sept 23 -27
- Justin Tucker
  - 300078 - DMO Support - AUV
    - INS measurement center lever arms
  - 902010 - Mesopelagic LRAUV
    - DVL housing design and layout tradeoffs
  - 901405 - Wave-Energy Conversion for Oceanographic Applications
    - 2 point mooring analysis
  - Overhead
    - PDM 2024 upgrade prep
- Johann Voigtlander
  - 902208 - Mini ROV Operations
    - MiniROV debugging in test tank
    - Built up cable for WetWifi - completed some tests and built a LabVIEW program based on our 'overlay.vi' code to grab ZMQ strings
    - Purchased 2x Joysticks and a button controller board
    - RMA on level wind motor
    - Obtained additional camera, laser, and multibeam data in the test tank
  - 902402 - CSEM
    - Organized fabrication of winch mounting plate
    - RMA a broken GPS logger
  - Overhead
    - Gave a tour to scripps institute student
  - Out of Office
    - April 16th - May 7th Germany CSEM
    - May 8th - May 12th Vacation